

```
1 public void getMaxProfit() {
2     int[][] table = new int[n + 1][capacity + 1];
3     // fill up table
4     for (int i = 1; i < n + 1; i++) {
5         for (int j = 1; j < capacity + 1; j++) {
6             if (weights[i - 1] > j) {
7                 // item doesn't fit, so we can't pick it up
8                 table[i][j] = table[i - 1][j];
9             } else {
10                // max of value item picked up or not
11                table[i][j] = Math.max(table[i - 1][j], values[i - 1] +
table[i - 1][j - weights[i - 1]]);
12            }
13        }
14    }
15
16    int[] pickedUpItems = new int[n];
17    int maxValue = table[n][capacity], tempValue = maxValue, i = n, j =
capacity, maxCapacity = 0;
18    // traceback, discovering items picked up and computing total weight
19    while (tempValue != 0) {
20        if (tempValue == table[i - 1][j]) {
21            // not picked up, so go one row up
22            tempValue = table[i - 1][j];
23            i--;
24        } else {
25            // item picked up, so go up and to the left as remaining
capacity is decreased
26            pickedUpItems[i - 1] = 1;
27            maxCapacity += weights[i - 1];
28            tempValue = table[i - 1][j - weights[i - 1]];
29            j -= weights[i - 1];
30            i--;
31        }
32    }
33 }
```